

**REMARKS**

In the Office Action the Examiner noted that claims 1-20 are pending in the application, and the Examiner rejected all claims. The Examiner's rejections are traversed below, and reconsideration of all rejected claims is respectfully requested.

**Double Patenting**

In item 1 on page 2 of the Office Action the Examiner advised the Applicant that "should claim 18 be found allowable, claim 14 will be objected to under 37 CFR §1.75 as being a substantial duplicate thereof."

As neither of these claims has been found allowable at this point, it is respectfully requested that the Applicant be allowed to address any double patenting issues remaining once the rejection of these claims under 35 U.S.C. §103 is resolved.

**Claim Rejections Under 35 USC §103**

In item 3 on pages 2-4 of the Office Action the Examiner rejected claims 1, 3-6, 8-10, 12-14, 16-18, and 20 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,489,982, issued to Ishibe (hereinafter referred to as "Ishibe") in view of U.S. Patent No. 4,758,071, issued to McLaughlin et al. (hereinafter referred to as "McLaughlin"). The Applicant respectfully traverses the rejection of these claims.

Claim 1 of the present application recites a beam scanning apparatus having a collimating lens "being one sheet of a spherical surface lens." The Examiner acknowledges that Ishibe does not disclose a "collimator lens being made of one sheet of a spherical surface lens, the collimator lens being made of glass," but goes on to state that McLaughlin discloses a collimator lens made out of a sheet of glass and having spherical surface, and that "[i]t would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the collimator lens in the device of Ishibe with a lens made out of one sheet of glass and having both surfaces of spherical shape as taught by McLaughlin. The Applicant respectfully submits that this is not a valid assertion, because there is no motivation to combine the two references.

MPEP § 2142 states that "[w]hen the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the Examiner to explain why the

combination of the teachings is proper." Here, the Examiner has simply stated, with no evidence to support the assertion, that the "motivation for doing so would have been to provide a collimator lens easy to produce and whose spherical aberration can be reduced at a low cost as suggested by McLaughlin." However, the low cost referred to by the Examiner is exactly why beam scanning apparatuses in the conventional art employ the plastic collimating lens, and therefore there would be no motivation to combine the more expensive lens described in McLaughlin with the beam scanning apparatus disclosed in Ishibe. The Examiner is required to present actual evidence and make particular findings related to the motivation to combine the teachings of the references. In re Kotzab, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000); In re Dembiczak, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Broad conclusory statements regarding the teaching of multiple references, standing alone, are not "evidence." Dembiczak, 50 USPQ2d at 1617. "The factual inquiry whether to combine the references must be thorough and searching." In re Lee, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002) (citing McGinley v. Franklin Sports, Inc., 60 USPQ2d 1001, 1008 (Fed. Cir. 2001)). The factual inquiry must be based on objective evidence of record, and cannot be based on subjective belief and unknown authority. Id. at 1433-34. The Examiner must explain the reasons that one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious. In re Rouffet, 47 USPQ2d 1453, 1459 (Fed. Cir. 1998).

There is ample evidence throughout the Ishibe reference to support the Applicant's assertion that the increased cost of the glass collimating lens would preclude any motivation to combine Ishibe and McLaughlin. In the discussion of the f- $\Theta$  lens in Ishibe, it is stated that the plastic lens is used in consideration of cost, even though the surface precision of a plastic lens is inferior to that obtained by polishing optical glass (Column 2, Line 63 through Column 3, line 13).

This is further supported by the components of the beam scanning apparatus itself disclosed in Ishibe. Instead of replacing the plastic f- $\Theta$  lens with a glass one which may be superior, it is apparently more cost effective to add a second (or more) plastic f- $\Theta$  lens 6b to work in conjunction with a first plastic f- $\Theta$  lens 6a to correct errors such as light source aberrations (Figure 2 and Column 7, Lines 41-67).

Also, there would be no reason to modify the Ishibe reference at all for the reasons given by the Examiner. To set forth a prima facie §103 rejection, there must be some evidenced reason for modifying a reference. Specifically, there must be evidence, outside of the present application, which motivates, leads, or suggests to one of ordinary skill to modify a reference (MPEP 2141). By using the combination of plastic f- $\Theta$  lenses disclosed in Ishibe, the error

amount between light sources used for the beam scanning “can be suppressed to an amount as small as  $0.857\mu\text{m}$  even when a focus error of 1mm occurs in the main scanning direction. Therefore, there would be no reason to modify the collimating lens of Ishibe, because the error correction in the light source is corrected by the combination of the plastic f- $\Theta$  lenses.

Thus, the reference of Ishibe actually teaches away from the combination of the references.

In order to form a proper §103 rejection, there must be a motivation to combine the cited references to attempt to show all of the features of the rejected claims. As discussed above, there is no motivation to combine the cited references. Also, there must be a reason to modify at least one of the references to incorporate the disclosure of the other. As discussed above, Ishibe teaches away from the combination. Therefore, it is respectfully submitted that claim 1 of the present application patentably distinguishes over the cited references.

Claims 3-4 depend from claim 1 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 3-4 also patentably distinguish over the cited references.

Claim 5 of the present application also recites “the collimating lens being one sheet of a spherical surface lens.” Therefore, it is respectfully submitted that claim 5 also patentably distinguishes over the cited references.

Claims 6 and 8 depend from claim 5 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 6 and 8 also patentably distinguish over the cited references.

Claim 9 of the present application also recites “the collimating lens being one sheet of a spherical surface lens.” Therefore, it is respectfully submitted that claim 9 also patentably distinguishes over the cited references.

Claims 10 and 12 depend from claim 9 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 10 and 12 also patentably distinguish over the cited references.

Claim 13 of the present application recites “a collimating lens, being one sheet of a spherical surface lens.” Therefore, it is respectfully submitted that claim 13 also patentably distinguishes over the cited references.

Claims 14 and 16 depend from claim 13 and include all of the features of that claim plus

additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 14 and 16 also patentably distinguish over the cited references.

Claim 17 of the present application recites "a collimating lens, being one sheet of a spherical surface lens." Therefore, it is respectfully submitted that claim 17 also patentably distinguishes over the cited references.

Claims 18 and 20 depend from claim 17 and include all of the features of that claim plus additional features which are not taught or suggested by the cited references. Therefore, it is respectfully submitted that claims 18 and 20 also patentably distinguish over the cited references.

In item 4 on pages 4-5 of the Office Action the Examiner rejected claims 2, 7, 11, 15, and 19 under 35 U.S.C. §103(a) as being unpatentable over Ishibe in view of McLaughlin, and further in view of U.S. Patent No. 6,172,787, issued to Naiki (hereinafter referred to as "Naiki"). The Applicant respectfully traverses the rejection of these claims.

As discussed in the preceding section of this Amendment, claims 1, 5, 9, 13, and 17 patentably distinguish over Ishibe and McLaughlin. Further, as Naiki merely discloses a laser beam scanning optical apparatus using a collimator lens having a positive refractive power in main and sub-scanning directions, Naiki does not cure the deficiencies of Ishibe and McLaughlin regarding claims 1, 5, 9, 13, and 17. Therefore, as claims 2, 7, 11, 15, and 19 depend from claims 1, 5, 9, 13, and 17, respectively, and include all of the features of those respective claims plus additional features which are not taught or suggested by the cited references, it is respectfully submitted that claims 2, 7, 11, 15, and 19 also patentably distinguish over the cited references, and the Applicant respectfully requests the withdrawal of the §103 rejections of these claims.

### Summary

There being no further outstanding objections or rejections, it is respectfully submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

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Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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